

Application No.: 09/700,372

Docket No.: 21625-00032-US

REMARKS

Claims 1, 3-4, 6-10, 13, 15, 17-19 and 21-22 are pending in the application. Claims 2, 5, 11-12, 14, 16 and 20 are canceled. Claims 1 and 8 are amended to better recite the claimed invention. Claims 1, 3, 6-7 and 9-10 are amended to eliminate recitations of reference numerals from the specification. Claims 7 and 22 are amended to address alleged antecedent basis problems cited by the Examiner. Claim 19 is amended to depend from claim 1, in view of the cancellation of claim 5. Claim 21 is amended to conform to the amendments to claim 8. No new matter has been added.

Claim Objections

Applicants request withdrawal of the objection to claim 5 for failing to further limit claim

1. Claim 5 has been canceled.

Claim Rejections - 35 U.S.C. §112

Applicants respectfully request withdrawal of the rejection of claims 7 and 22 as being indefinite under 35 U.S.C. §112, second paragraph, due to lack of antecedent basis for the limitation "the one or more treatment blocks". The rejected language has been removed from the claims.

Claim Rejections - 35 U.S.C. §103

Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1, 3-5, 7, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over WO 98/25747 in view of Panandiker et al. (US 4,055,550), and further in view of Goodridge (US 3,607,998).

As stated above, claim 5 has been canceled.

In order for a claimed invention to be obvious, all of the claim recitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 974). The invention as set forth in claim 1 recites individually heating the components of the polymer-based material, mixing the components and spraying the polymer-based material in an

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electrically charged state. Claim 1 also recites simultaneous mixing of the components and spraying of the polymer-based material. The elements added to claim 1 regarding simultaneous mixing and spraying find support, for example, in the original specification on page 6, lines 8-16 and in Figure 1. Separate components of reactive multi-component polymers cannot be mixed prior to spraying, because mixture of the polymer components prior to spraying will result in harmful pre-curing effects that destroy pipes and lines and negative effects on material flows and mixing ratios. The claimed process is advantageous in that simultaneous mixing of components and spraying of the material avoids the negative effects that would result from mixing the components prior to spraying the material.

Further, the claimed invention recites that the mould is not grounded. The use of a mould that is not grounded allows a strong electric field to be achieved so as to prevent charged material from discharging too quickly.

Claim 1 also recites providing a control unit to enable at least adjustment of a voltage level of one or more treatment blocks of the mould. This limitation is supported by previously filed claim 7.

WO 98/25747 discloses an apparatus to be used with pre-mixed polymeric based materials that are actually single component materials with high solvent contents. The apparatus of WO 98/25747 is not capable of processing multi-component materials, because it would require premixing of a multi-component material, which would result in the negative effects discussed above. Furthermore, there is no heating unit in the apparatus of WO 98/25747.

Panandiker and Goodridge fail to teach the elements of the claimed invention that are missing from WO 98/25747. Specifically, Panandiker fails to teach mixing and spraying the material simultaneously, and therefore cannot mix and spray multi-component reactive polymeric materials without experiencing the aforementioned negative effects. Panandiker also does not teach material charging or use of a spraying unit. Panandiker only mentions conventional coating techniques such as powder coating, and does not actually teach or use any kind of electrostatic process carried out by spraying. Goodridge fails to teach anything related to fluid material spraying.

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The references also fail to teach a mould that is not grounded. Although the Examiner asserts that Goodridge teaches that a grounded mould and a high voltage mould are equivalent, this is not the case. Those skilled in the art of electrostatic spraying know that a grounded mould cannot be used to achieve a strong enough electric field, because charged material will get discharged too quickly or material will not become charged at all.

Furthermore, the references fail to teach a control unit to enable at least adjustment of a voltage level of one or more treatment blocks of the mould.

The references as combined by the Examiner fail to teach or suggest the invention of claim 1 for the reasons stated above. Furthermore, there is no motivation to combine the references as suggested by the Examiner, as the references concern different types of materials and different types of spraying techniques. Applicants submit that, in viewing the prior art, one could only arrive at the present invention by improperly engaging in the application of hindsight. Since the invention of claim 1 is not obvious in view of the applied references, claims 1, 3-4, 7, 13 and 15 are allowable.

Applicants respectfully request reconsideration and withdrawal of the rejection of claims 6-7 and 17-19 under 35 U.S.C. §103(a) as being unpatentable over WO 98/25747 in view of Panandiker, and further in view of Goodridge and Itoh (US 3,976,031).

Claim 1 is allowable over WO 98/25747, Panandiker and Goodridge for the reasons stated above. Itoh does not teach the elements of claim 1 that are missing from WO 98/25747, Panandiker and Goodridge. Itoh does not teach a coating process for thin-walled articles, and is therefore not analogous art. Furthermore, Itoh does not teach a mold with electrically charged surfaces. Instead, regions with different voltages are placed on discharge electrodes, not on the mold surface. Such an arrangement is suitable for elongated and plain substrates, but is not suitable for three-dimensional coating of thin-walled articles. Additionally, Itoh does not teach material charging with a spraying unit and teaches only the use of powder material, which is not related to fluid material spraying. For these reasons, Itoh fails to supply the elements of present claim 1 that are missing in WO 98/25747, Panandiker and Goodridge.

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Applicants respectfully request reconsideration and withdrawal of the rejection of claims 8-9 and 22 under 35 U.S.C. §103(a) as being unpatentable over WO 98/25747 in view of Goodridge.

Claim 8 recites an apparatus including: two or more reservoirs that contain a polymer-based material that comprises one or more components; a single-processing unit to electrically charge the polymer-based material and form a spray of electrically charged material onto a three-dimensional mould, wherein the mould is not grounded, and wherein the single-processing unit is adapted to simultaneously mix the components, electrically charge the material and spray the material; and a control unit to adjust at least a voltage level of one or more treatment blocks of the mould. WO 98/25747 and Goodridge fail to teach, either independently or in combination, two or more reservoirs that contain a polymer-based material that comprises one or more components, a single processing unit adapted to simultaneously mix the components, electrically charge the material and spray the material, and a control unit to adjust at least a voltage level of one or more treatment blocks of the mould. Therefore, claims 8-9 and 22 cannot be obvious in view of WO 98/25747 and Goodridge.

Applicants respectfully request reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over WO 98/25747 in view of Goodridge, and further in view of Itoh. Claim 8 is allowable over WO 98/25747 and Goodridge for the reasons provided above. Itoh does not teach the elements of claim 8 that are missing in WO 98/25747 and Goodridge. Furthermore, as stated above, Itoh does not teach a mold with electrically charged surfaces, but merely teaches discharge electrodes. Therefore, claim 10 is allowable.

Applicants respectfully request reconsideration and withdrawal of the rejection of claim 21 under 35 U.S.C. §103(a) as being unpatentable over WO 98/25747 in view of Goodridge, and further in view of Panandiker. Claim 8 is allowable over WO 98/25747 and Goodridge for the reasons provided above. Panandiker fails to teach the elements of claim 8 that are missing from WO 98/25747 and Goodridge. Therefore, claim 21 is allowable over the cited references.

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Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 21625-00032-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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